

Guided Imagery for Arthritis and Other Rheumatic Diseases: A Systematic Review of Randomized Controlled Trials

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■ ABSTRACT:

Many individuals suffering from arthritis and other rheumatic diseases (AORD) supplement pharmacologic treatments with psychosocial interventions. One promising approach, guided imagery, has been reported to have positive results in randomized controlled trials (RCTs) and is a highly scalable treatment for those with AORD. The main purpose of this study was to conduct a systematic review of RCTs that have examined the effects of guided imagery on pain, function, and other outcomes such as anxiety, depression, and quality of life in adults with AORD. Ten electronic bibliographic databases were searched for reports of RCTs published between 1960 and 2013. Selection criteria included adults with AORD who participated in RCTs that used guided imagery as a partial or sole intervention strategy. Risk of bias was assessed using the Cochrane Risk of Bias Assessment Instrument. Results were synthesized qualitatively. Seven studies representing 306 enrolled and 287 participants who completed the interventions met inclusion criteria. The average age of the participants was 62.9 years (standard deviation = 12.2). All interventions used guided imagery scripts that were delivered via audio technology. The interventions ranged from a one-time exposure to 16 weeks in duration. Risk of bias was low or unclear in all but one study. All studies reported statistically significant improvements in the observed outcomes. Guided imagery appears to be beneficial for adults with AORD. Future theory-based studies with cost-benefit analyses are warranted.

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Arthritis and other rheumatic diseases (AORD) are a leading source of disability for millions of adults. It is estimated that 55.2 million adults in the United States self-report physician-diagnosed arthritis, with estimated prevalence expected to

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reach more than 67 million by the year 2030 (Barbour et al., 2013). Arthritis and other rheumatic diseases include more than 100 different conditions that are typically caused by inflammation, swelling, and pain in patients' joints, ligaments, bones, muscles, and sometimes internal organs throughout the body (NIAMS, 2014). Adults with AORD often experience declines in lifestyle and recreational physical activity and are more prone to depression and anxiety (Covic et al., 2012; Kaplan, Huguet, Newsom, & McFarland, 2003; Murphy, Sacks, Brady, Hootman, & Chapman, 2012; Shih, Hootman, Kruger, & Helmick, 2006). Although AORD can affect people of all ages, rheumatoid arthritis (RA), osteoarthritis (OA), and fibromyalgia are the most common AORD conditions experienced by adults, with prevalence estimates in the United States of 1.3 million (Helmick et al., 2008), 27 million (Lawrence et al., 2008), and 5 million (Lawrence et al., 2008), respectively. With an increasing tendency toward an older population, health care costs associated with AORD will likely continue to rise (Hootman & Helmick, 2006), supporting the need for strategies intended to help individuals cope with chronic pain and augment other treatments (Hochberg et al., 2012).

Treatment strategies for AORD generally include a combination of exercise, diet, and medications (NIAMS, 2014). Body weight management is particularly important for patients with AORD in order to reduce stress on painful joints. Pharmacologic treatment for AORD depends on the disease being treated and the patient's individual circumstances. For instance, disease-modifying nonbiologic and biologic medications may be prescribed to patients who have been diagnosed with RA early in the disease (3-6 months) without a poor prognosis (Saag et al., 2008). Those with RA or OA may also be prescribed nonsteroidal anti-inflammatory drugs (MacDonald, 2000), whereas only duloxetine, milnacipran, and pregabalin are approved by the Food and Drug Administration for the treatment of fibromyalgia (NIAMS, 2014).

Because of the side effects, risks, financial burdens, and patient dissatisfaction with common pharmacologic treatments (Nestoriuc, Orav, Liang, Horne, & Barsky, 2010; Page & Henry, 2000; Taylor, Everett, Taylor, Watson, & Taylor-Stokes, 2013; Woolf et al., 2004), many individuals suffering from AORD resort to psychosocial strategies. These may include, but are not limited to, relaxation, mindfulness meditation, or hypnosis (Jensen, 2011). Guided imagery has been reported to have positive results, with respect to AORD-related outcomes, in randomized controlled trials (RCTs) (Baird, Murawski, & Wu, 2010; Baird & Sands, 2004, 2006; Fors & Gotestamm,

2000; Fors, Sexton, & Götestam, 2002; Lewandowski, Good, & Draucker, 2005; Menzies, Taylor, & Bourguignon, 2006). Guided imagery can be defined as a quasi-perceptual, multisensory, and conscious experience that resembles the actual perception of some object, scene, or event but occurs in the absence of external stimuli (Thomas, 2014). Also known as "mental simulation" or "visualization," this cognitive technique has deep historical roots, scientific interest, and popular applications. Psychologists have long used guided imagery to help individuals cope with pain, anxiety, and trauma (Thomas, 2014). Guided imagery interventions with AORD patients often begin with breathing or progressive muscle relaxation exercises and then proceed to images of movement and physical activity free of pain and stiffness (Baird et al., 2010). Importantly, guided imagery is inexpensive, relatively easy to teach, and can be readily applied in both clinical and community-based settings (Baird et al., 2010; Giacobbi, Dreisbach, Thurlow, Anand, & Garcia, 2014).

Given the overlap between the various psychosocial strategies used to treat AORD (Jensen, 2011), systematic reviews of one or more of these techniques helped inform the present review. One team of researchers systematically reviewed 12 RCTs with participants who were diagnosed with fibromyalgia ($n = 5$), osteoarthritis ($n = 2$), rheumatoid arthritis ($n = 1$), neck pain ($n = 2$), pain in the upper limbs ($n = 1$), and diffuse long-term pain ($n = 1$). The studies included interventions that used relaxation techniques, massage, biofeedback, the provision of information, and cognitive behavioral techniques for the treatment of musculoskeletal pain (Persson, Veenhuizen, Zachrisson, & Gard, 2008). Although the authors concluded that relaxation training could be effective at pain reduction, their results should be viewed with caution because of the heterogeneity of techniques used in the studies reviewed.

Another systematic review with meta-analysis that focused on fibromyalgia patients included six RCTs that tested the efficacy of hypnosis and guided imagery on pain, sleep, fatigue, depressed mood, and health-related quality of life (Bernardy, Fuber, Klose, & Hauser, 2011). The authors of this review included studies that combined imagery and hypnosis and pointed out that both approaches attempt to promote changes in emotion, sensation, perception, thought, and behavior by offering suggestion. Although meta-analytic results indicated significant reductions in pain, these observations were tempered by low methodologic quality of the studies reviewed (adequacy of randomization, blinding of outcome assessor, and lack of intent-to-treat analyses). Effect sizes on the other outcomes considered in this meta-analysis were

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